MISSOURIENSIS

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FIRST ANNUAL MEETING

This unofficial report of the first annual meeting of the Missouri Native Plant Society is written by the "editorial we", in haste to get this issue of Missouriensis to you as soon as possible. Unfortunately, "we" arrived at Camp Pin Oak, in Lake of the Ozarks State Park, too late to partake of the promised mirth on Friday evening, and were unable to stay for more than a short walk on a dolomite glade, when the meeting was over.

A generous majority of Board members as well as a number of others, convened at a little after ten a.m., Saturday, June 7th. In the unavoidable absence of our President, Edgar Denison, our Vice-President, called the meeting to order, after which we were welcomed by John Karel, who is not only a Board member, but also Director of the State Division of Parks and Historic Preservation. Appropriately, Karel clued us in on the history of our meeting place, constructed by the CCC, in the 1930's. (For you youngsters, all those C's stand for the Civilian Conservation Corps, set up by Franklin D. Roosevelt, to give employment to young people in the "great" depression.) Karel also introduced member Jean Freiling, who visited the camp, early in its existence, with Girl Scouts; we were delighted to have her with us.

After minor changes, the minutes of the last meeting were approved, and old business given a new look. This resulted in a renewed request for the submission of logos for our organization, this request to be accompanied by a description of what is needed (see pg. 18).

The new look also turned up the fact that our Bylaws, adopted a year ago, include very specific rules pertaining to the nomination of Board members (see pg. 16), and that we must adhere to these in a continuing request to members to submit names to the nominating committee. This consists of Melvin Conrad, Chairman; Virginia Klomps of the Missouri Conservation Department; Wallace Weber of Southwest Missouri State University; and your editor. Suggestions for people to be considered as nominees should be sent to Dr. Conrad at the Biology Department, Northeast Missouri State University, Kirksville, 63501, before August 1.

The idea of a photographic contest was discussed at some length, becoming involved with the quite different topic of a display exhibit, to be used at meetings or elsewhere when we wish to attract attention to MONPS, or to explain our raisons d'etre. Ultimately, a decision was reached to forget the photo contest, at least for the present, but to push rapidly for the development of a display; this project had been put into the hands of Denison and Hawker at our last meeting.

Wallace Weber, of Southwest Missouri State University, invited members of MONPS to the Seventh North American Prairie Conference (see pg.) and then spoke to the subject of the computerization of collection data. Weber and his associate in the Department of Life Science at SMSU, Paul Redfearn, have been interested for some time in computerizing data about their institution's herbarium. He generously announced that the facilities at SMSU would be available for MONPS material, but emphasized the extreme difficulty of working up an original program, suggesting the possibility of tieing into work already computerized for herbaria covering other areas. Weber agreed to discuss this whole matter with Mr. John Krebs, whom Denison had already contacted about working up such a program for MONPS.

The next topic introduced was an unhappy description of our organization as "floundering"; in this instance, the word was used in Webster's sense of "struggling to move or obtain footing". The suggestion that the word applies to the present condition of MONPS met with general acquiescence. Denison presented an example of our "struggle to obtain footing" by raising the question of what we plan to do with the material we seek about our flora, and where it is to be deposited. This led to a long discussion about whether MONPS should work through regional groups centered on educational institutions or interested volunteers; about whether sufficient interest in the study of our local flora can be generated among people who are not rewarded either by pay or by academic credit; and, finally, about what are the basic objectives of our Society. This led back, once more, to the Bylaws, in which Article I reads as follows:

> The purpose of the Native Plant Society of Missouri is to promote the preservation, conservation, and study of the wild plants and vegetation of Missouri, the education of the public to the value of the native flora and its habitat, and the publication of related material.

Much material has already been published in Missouriensis and this has included information about habitats and sitings, reported by our members. The general consensus, however, was that we should receive much more of the same type of information: lists of plants seen on outings and reports of what seem to be areas of unusual floral interest, unusual habitats, or those that are in danger of destruction. Obviously, all such reports could not be published, but it was emphasized by various members of the Board that no one should hold back such information: it will stimulate our professional representatives to maintain their interest in our objectives, and it will give the many well-informed, but not professionally associated, members of MONPS a funnel through which their contributions become significant, and will be recognized as such. No one should fear that reports might be incorrect in plant identification, or repetitious of material already on hand. The Board was delighted to accept the offer of member Gary Reese, a botanist with a degree from Utah State University, to become the "clearing house" through whom such material can be checked. It should be sent first to your Editor, who may well wish to publish it, and who will then forward it to Reese, whose responsibility it will be to prevent incorrect or redundant material from adding to the work of the Conservation Department or the Department of Natural Resources, the ultimate repositories for such information.

At this point, Weber introduced a new topic that seemed suddenly to put all the morning's discussions into focus, and to represent, perhaps, the very target towards which MONPS should move in its "struggle to obtain footing". As he has outlined on page 4, Weber reported steps already taken in preparation of a manual of the Missouri flora which would update Steyermark's work, and be more readily usable in the field. This announcement was met with enthusiasm, since all present recognized it as a potential stimulus to the collection of the sort of material we seek, as well as the objective around which such collections could be systematically organized. It was unanimously agreed that our Society should endorse and sponsor this project.

Finally, John Karel presented a Wilderness Study Report concerning the possibility of establishing the Paddy Creek area of Mark Twain National Forest as a Wilderness Area. Seven natural plant communities of the Missouri Ozarks exist in this portion of the Forest, making it particularly interesting and valuable from the point of view of MONPS. The Board voted unanimously that our Secretary, Paul Nelson, should immediately write to the Forest Supervisor, in Rolla, to express strong backing for the project.

The meeting closed with Mel Conrad's announcement that he has reserved the shelter at Thousand Hills State Park, Kirksville, for our next meeting, September 6. Besides the interesting petroglyphs that are unusual evidence of prehistoric habitation in this area, Conrad promised trips by pontoon boat to see the 40 acre colony of Populus grandidentata, the Large-toothed Aspen, recently acquired for the Park by the Department of Natural Resources.

The "editorial we" could not stay to participate in the variety of field trips offered, but was thrilled to see a different sort of variety, all on Rocky Top Glade, with the dolomite substrate mentioned above, a most interesting small part of the more than 16,000 acres of the Park. The walk in this area was led by the knowledgeable Park Naturalist, Tom Nagle, who explained the glade formation and then hypnotized one of its most active inhabitants, the Fence Lizard, otherwise (and correctly) known as a Swift.

Nagle's hypnosis was performed by stroking the creature's belly, to make it (as it always will!) lie peacefully on its back, its legs widely askew. Paul Nelson had a somewhat similar effect on a female Black Widow Spider that posed patiently (without stroking, needless to say) for him to photograph, while the rest of us had good looks at her tell-tale markings. The glade also gave a number of us our first looks at Echinacea paradoxa, the Yellow Cone-flower, of limited distribution in Missouri and Arkansas.

All in all, the meeting, plus even so short a hike, made the long trip more than worthwhile, and "we" are sorry for those of you who missed it. Hope to see you on September 6!

A TARGET FOR MONPS

A NEW MISSOURI VASCULAR PLANT MANUAL --- A PROPOSAL

Wallace R. Weber
Southwest Missouri State University

Steyermark's Flora of Missouri has been the "bible" of Missouri's vascular plants for 17 years. Not only has it been an invaluable source of information concerning county records, locations of rare species, and interesting information about the folklore of Missouri, but it has served as "the record" of what species occur in Missouri. It is indeed a monumental contribution to North American botany.

Even though it has been, and shall continue to be, an important botanical work, I believe that, after nearly two decades, it is time for an update, and that an alternative to Steyermark's manual should be considered. Let me enumerate some of the reasons.

(1) Steyermark's book was never meant to be a field manual and its large size has always been an inconvenience to those who wish to carry a manual to the field. A field manual, perhaps similar to Mohlenbrock's Vascular Flora of Illinois, which is small in size and has neither distribution maps nor illustrations, would be welcomed by Missouri's field botanists.

(2) The Flora of Missouri presently has no family, generic, or species descriptions for quick reference. Instead one must laboriously read through the keys in order to obtain such information. Such descriptions are useful to the specialist, as well as to the beginning student, and should be part of a new manual.

(3) Because Steyermark has chosen to include these descriptions as part of his keys, the keys are lengthy, sometimes excessively wordy, and quite often confusing. Good keys can be, and should be, constructed as concisely as possible, using in most instances only one or two characteristics per couplet. Thus, a revision of Steyermark's keys in a more concise manner would, among other things, eliminate some of the bulkiness of the present manual.

(4) A number of taxa new to Missouri have been discovered since Steyermark's 1963 publication. This information should be made available to Missouri botanists.

(5) During the 12 years I have taught courses on the local flora at Southwest Missouri State University, one of the most persistent complaints I have had from students concerns the cost of the Flora of Missouri. Cost over those years has risen from $17.00 to the present cost of $32.50. I would hope that a field manual could reduce this cost to a third or half the cost of the present manual.

About 7 or 8 years ago, I discussed the above concerns with Dick Wunderlin, then at the Missouri Botanical Garden. At that time we decided to embark on a project to write a shortened version of the Flora of Missouri in which we intended to solicit the help of as many Missouri botanists as possible. The project, in its beginning, got off the ground primarily because of the efforts of Dr. Wunderlin and his contacts at the Missouri Botanical Garden. To date material on 28 plant groups has been prepared for this projected manual.* Unfortunately, however, the project has, at the present time, come to a virtual standstill. This is due partly to the fact that Dick Wunderlin moved to Florida, and partly to the lack of a centralized organization through which we could communicate our ideas to botanists around the state and solicit their help.

At the June Board meeting I proposed that the Missouri Native Plant Society members become involved in continuing this project. Although the proposal appeared to be well received by those members present, Edgar Denison suggested that since the flora of Illinois and Missouri were similar in many respects, we first consider using Mohlenbrock's Vascular Flora of Illinois and modify it to fit the flora of Missouri. After consulting with Bob Mohlenbrock (who could not be present at the meeting), we concluded that the differences between the two states were enough that it might be better not to restrict our efforts to modifying the Illinois manual, but that we establish our own format. Dr. Mohlenbrock was very enthusiastic about a new manual for Missouri and wishes to become involved in our project. Dr. Mohlenbrock suggested that he and I meet in August, discuss the project, and formulate some guidelines for a new field manual for Missouri.

If any of you are interested in assisting in the preparation of this manual, please write or call:

Dr. Wallace R. Weber
Department of Life Sciences
Southwest Missouri State University
Springfield, Missouri 65802
Phone: 417-836-5883

*Below is a list of families or groups and the persons who have already prepared or agreed to prepare keys and descriptions for a new Missouri manual.

1. Pteridophytes - Dr. James Key
2. Gramineae (in part) - Dr. Grant Pyrah
3. Liliaceae - Mr. Mark Reinking
4. Orchidaceae - Mr. Art Christ
5. Moraceae, Urticaceae, Aristolochiaceae, Polygonaceae, Heliantheae - Dr. W. R. Weber
6. Portulacaceae, Rubiaceae, Rosa - Dr. Walter Lewis
7. Geraniaceae, Oxalidaceae, Linaceae, Zygophyllaceae, Rutaceae, Simaroubaceae - Dr. Duncan Porter
8. Passifloraceae and Apocynaceae - Dr. Dave Spellman
9. Onagraceae - Dr. Peter Raven
10. Gentianaceae, Hydrophyllaceae, Boraginaceae, Valerianaceae - Dr. Paul Redfearn
11. Convolvulaceae - Dr. D. Austin
12. Solanaceae - Dr. W. D'Arcy
13. Compositae - Dr. Richard Wunderlin

REDISCOVERED SITE

REDISCOVERY OF *ADIANTUM*

CAPILLUS - VENERIS IN JEFFERSON COUNTY, MISSOURI

Steve L. Orzell
Chesterfield, Missouri

On July 15, 1979 *Adiantum capillus-veneris* L. was rediscovered near Goldman in Jefferson County of southeastern Missouri. *Adiantum capillus-veneris* is recorded from seventeen southern Missouri Ozark counties (Steyermark, 1963). Fernald (1950) states the species as, "occurring from Cuba and Florida across the southern United States, south into Mexico and north into southwestern Virginia, Kentucky, Missouri, South Dakota, Utah and southern California." The population at Goldman is a 100 - 120 mile northeast range extension from the nearest Missouri records in Phelps, Shannon, and Carter County, representing the northeastern limit of the species in North America.

The first collection from Jefferson County was made by *Kellogg*, s.n., sandstone ledges, Antonia, Jefferson County, October 13, 1929; Antonia lies some four miles northeast of the Goldman station. Later, Steyermark collected specimens from Jefferson County: *472*, in recess of moist shaded St. Peter sandstone bluff about 1.75 miles northeast of Goldman, May 21, 1931; *8577*, moist shaded St. Peter sandstone with lime leaching down, 8 miles northwest of Pevely, September 11, 1932.

Thirty-seven plants were rediscovered at the Steyermark (*472*) collecting site near Goldman, Jefferson County. Nearly fifty years have passed since specimens were collected from Jefferson County, as attempts by local botanists to locate this fern in Jefferson County had been unsuccessful and many believed it had been extirpated.

All the ferns crowded the base of a vertical deposit of tufa within a southeast facing shelter cave. This crescent-shaped overhanging shelter originated in St. Peter sandstone (Ordovician), a remarkably pure orthoquartzite sandstone composed of sorted fine to medium spherical quartz granules. Of particular interest is restriction of the colony to the tufa; a calcium carbonate precipitate that has encrusted on the sandstone as seepage leaches downward from overlying Joachim strata. Upon application of dilute hydrochloric acid to the tufa, there was considerable effervescence, indicating limey conditions. This unique microhabitat escaped Steyermark (1951, 1963) as he reported the species as "rarely on sandstone". None of the ferns grew on sandstone at the Goldman shelter.

The fact that this population is located in a shelter along the Crystal escarpment is of phytogeographic interest. The escarpment flanks the Ozark uplift on its eastern slope trending north-south through Ste. Genevieve and Jefferson Counties. Numerous other shelters were investigated but only the Goldman shelter which lies along the northwestern diagonal course of the Crystal escarpment in north-central Jefferson County harbored *Adiantum capillus-veneris*.

Bretz (1965) believed that the crest line and back slope of the Crystal escarpment in northern Jefferson County, particularly at Sandy Ridge, carries evidence of the Springfield peneplain. Since Adiantum capillus-veneris is characteristic of the Springfield plateau of southwestern Missouri and northwestern Arkansas, might the occurrence of Adiantum capillus-veneris along the escarpment seemingly amplify Bretz' geomorphic theory?

Literature Cited

Bretz, H. J. "Geomorphic history of the Ozarks of Missouri." Missouri Geological Survey and Water Resources, 2nd ser., v. 41. 147 pp. 1965.

Fernald, M. L. "Adiantum capillus-veneris in the United States." Rhodora 52:201-208. 1950.

Steyermark, J. A. "Plant survey of Missouri." Missouri Botanical Garden Bulletin 39: 31-38. 1951.

_____. "Flora of Missouri." Iowa State University Press, Ames. 1728 pp. 1963.

HELP WANTED

A REPORT ON TWO VARIETIES OF PENSTEMON COBAEA

Steve L. Timme and Linda J. Knight
Springfield, Missouri

Seven species of Penstemon occur in Missouri and can be found in habitats ranging from woodlands to prairies. One of the species, P. cobaea, contains two varieties that are strikingly beautiful. The varieties of P. cobaea produce very large flowers making them quite noticeable from a distance. Both varieties have very restricted habitats, but according to Steyermark's Flora of Missouri, they can be easily grown from seed in a limestone rock garden.

Penstemon cobaea var. cobaea is on the Missouri endangered species list. Recently it was found on Walley's Mound southeast of Merwin in Bates County. This is the only location where they were found, but no other similar nearby habitats were explored. Approximately 75 plants of this variety, which vary from white to pale lilac lined with purple, were found.

Penstemon cobaea var.purpureus is a nationally threatened species and is on the Missouri rare list. It is the more striking of the two varieties and can be found on limestone glades in Christian, Barry, Stone, Taney, and Ozark Counties. The large violet to rose-purple flowers are very noticeable,

even from some distance. When found along with the bright yellow flowers of Oenothera missouriensis, the two create a scene that would capture the eye of the photographer and the fancy of the botanist. This variety of P. cobaea is one of the more showy species of the limestone glades. Over 100 plants were found along highways 160 and 125 in Taney and Christian Counties. Other reports indicate this variety is located on several glades throughout Hercules Glade Wilderness.

Penstemon cobaea var. cobaea and var. purpureus are currently protected in Missouri. They can easily be killed out by the invasion of other prolific plants. After observing P. cobaea var. purpureus for several years, it appears that roadside maintenance has allowed fescue to take over and eliminate populations where they once were found. Continued yearly observation is needed to ascertain the status of the two varieties of Penstemon cobaea.

TRADESCANTIA SPECIES

Dr. Peter Raven of the Missouri Botanical Garden forwards requests from researchers at the Jodrell Laboratory, Royal Botanic Gardens at Kew, and the Centro de Estudios Farmacologicos y De Principios Naturales in Buenos Aires, for cuttings of species of Tradescantia.

In line with MONPS policies for the collection of plant materials, the procurement of such cuttings is a legitimate contribution to research, and we are happy to be of assistance in both projects. We do warn, however, that participants should be very sure of the species before making the cuttings, and that their work will not endanger the survival of the plants involved.

If you wish to collect such materials, contact Dr. Raven for information about the species involved, shipping instructions, and arrangements for repayment of related expenses. The address of the Missouri Botanical Garden is P. O. Box 299, St. Louis, Missouri 63166.

PLATANTHERA LEUCOPHAEA

To help promote interest in the conservation of endangered species, the Garden Club of St. Louis is distributing color postcards of Platanthera (Habenaria) leucophaea, the Prairie White Fringed Orchid.

Known to grow one and a half to two and a half feet high in moist upland and river bottom prairies and spring-fed calcareous meadows, this orchid blooms in July. Its flowers are large, white, fragrant, sometimes tinged with green, and the petal segments are copiously fringed. Be on the lookout for it, during summer wanderings, and, IF you should be lucky enough to come upon this rare and lovely plant, mark its location, habitat, and number of plants, if possible, and report your finding to:

Natural History Section
Department of Conservation
Box 180
Jefferson City, Missouri 65102.

NATIONAL NETWORK

An "intermittent newsletter to a network of friends of the native flora" represents the growing nationwide interest in protecting plants. As the founder-editor, Alice O. Howard puts it, "Animals have had vocal supporters for a long time; plants tend to get second-class treatment because they haven't had them. We think they are there, just not organized effectively."

In the issue of "Network" dated 18 Feb. 1980, there appeared a 5 page in-depth article about the MX missile, entitled "So What Does The MX Missile Have To Do With Rare Plants?"; in the subsequent issue, dated 14 April, 1980, an updated "Special Alert Per The MX Project" with specific instructions on the subject.

Ms. Howard clarifies as follows the issue of individual input on such subjects -

> Some of you have never dabbled in politics and might find even the thought repugnant. But if we want to change things, we shall have to plunge in. The first step is the hardest. If you are an organizational contact, don't fear that writing an occasional letter will jeopardize your organization's tax-exempt status. Lobbying must be a large part of the budget before problems arise with IRS status. The efforts of the California Native Plant Society referred to above did not jeopardize our tax status as there was no paid lobbyist.

Furthermore, a show of interest in the National Alliance for Plants brings a valuable sheet of information about whom to address and where, as well as a listing of Congressional Committees of Jurisdiction on the Endangered Species Act and other important, pertinent information. We urge the members of MONPS to write directly to Alice O. Howard, 6415 Regent St., Oakland, California 94618, in order to show interest in the valuable service of this organization and to have their names placed on the mailing list for future issues of "Network". We will occasionally quote from same, as we did in our last issue, but much of the information sent out by Ms. Howard will be out-of-date by the time we get into print. However, this is by no means true of all her material, as witness the following:

TRANSPLANTING WILL SOLVE PLANT CONFLICTS??

> House Report No. 95-1625 (Committee on Merchant Marine & Fisheries) in the discussion of the legislative background to the 1978 Endangered Species Act amendments says that, for plants, "If a conflict develops, it will be a simple matter to relocate populations of these species to avoid a violation of section 7." Transplantation keeps popping up among the biologically naive as an approach to protecting rare plants. But what would one do about an annual in mid-winter, or a large tree, or a plant adapted to a peculiar substrate or very specialized microhabitat? And of course transplanting, even if successful, would still lose much of the gene pool. Yet this report might be quoted as suggesting congressional sanction for such a solution.

Reasoned objections to the concept that transplanting is a responsible alternative should be directed to Congressman John Murphy, Chairman, Committee on Merchant Marine & Fisheries, House Office Building, Washington, DC 20515.

WHOSE PLANTS ARE THEY

Virginia L. Klomps
Jefferson City, Missouri

As members of a native plant society, we are all concerned with the protection of our native flora. In Missouri, all of our plants on public land are protected. This protection is provided in the Department of Conservation Wildlife Code, which states: "The destruction, cutting or removal of any vegetation except mushrooms, berries or other fruits is prohibited... on all wildlife refuges, wildlife management areas, state forests, natural areas, commission lakes, fishing accesses and all other commission-owned, managed or leased lands and water." This includes all state park lands posted as wildlife refuges.

But what about the plants growing on private land? Over 90% of Missouri is in private ownership and will always remain so. To understand the status of plants on private land it is helpful to go back to English common law. In English common law, plants were considered part of the real estate because they were rooted in the ground. Wildlife, on the other hand, roamed free and were considered the property of the king, as today they are considered property of the state.

Today, as then, plants are considered a part of the real estate, and so are covered under trespass laws. In Missouri, plants are covered under three statutes on property damage. Property damage in the first degree involves damage to an extent exceeding five thousand dollars. Property damage in the second degree involves damage exceeding five hundred dollars. In the third degree, property damage includes any damage which is knowingly incurred. No value need be shown, only that some value is attached to the item destroyed; and any item stolen or destroyed tends to become valuable by virtue of its theft or destruction. Property damage in the third degree is a class B misdemeanor. Most plants would be included in this category.

Unfortunately many landowners are either not concerned, or are concerned, but may be absentee landowners and unable to closely monitor their land. Also, our own perceptions of property will often change with the size of land involved. Few people would pick a flower from someone's front or backyard. But if you increase the size of the area to, say, 40 acres, the impact seems much less, and our sense of responsibility to the area is also lessened. The landowner probably wouldn't miss a few plants out of 40 acres, especially near a roadside, but, as responsible botanists, we must set a good example in preserving our native flora.

STEYERMARK COLLECTION

Sherry Morgan
Jefferson City,Missouri

After having heard from several sources that some of Julian Steyermark's collections are in the basement of the Ava District Ranger's Office (Mark Twain National Forest), I traveled to Douglas County to examine the collections. There are approximately 750 specimens in an old herbarium cabinet, presently being cared for by Wildlife Biologist Gary Houff.

Gary speculates that the collections were deposited in the Ava Office as voucher specimens for a report that Steyermark submitted to the U. S. Forest Service in 1937. When transferred to that office Gary inherited an old paper titled "Sections C & D of Grazing Report," which mainly describes species composition in forested areas of the old Gardner National Forest.

The collection is in fairly decent shape and was added to in 1948 and 1949 by one S. Clark Martin, apparently a Forest Service employe. Gary Houff currently uses this collection to confirm plant identifications that he makes during range analyses, and also to point out differences in various grass species to fellow workers.

The only specimen of note is Steyermark collection #11542 of Heuchera missouriensis from Hall's Bluff in Wayne County. Interestingly enough, the specimen is only labeled Heuchera, never was annotated as to species, but is cited in the Flora of Missouri (pg. 779). The specimen has no flowering stems which makes identification rather difficult.

The U. S. Forest Service personnel are agreeable to having this collection used by botanists and other interested people, but they do request a telephone call in advance to insure that someone will be around to make the collection available.

PRAIRIE CONFERENCE

As we announced in our last issue, the Seventh North American Prairie Conference will be held on the campus of Southwest Missouri State University on 4-6 August; but now we have the full program to report, in the strong belief that those members of MONPS able to attend will be amply rewarded.

On Sunday, August 3, a field trip to areas near Springfield is scheduled at one p.m. The annual meeting of the Missouri Chapter of the Nature Conservancy will also be held during that afternoon. However, the Conference officially begins (and with a bang!) on Monday, August 4.

That day will be devoted to three major sessions centered around the topics "Prairie Floristics and Faunistics", "Cedar Glades", and "Prairie Ecology". In the late afternoon there will be a showing of slides of "Prairie Wild-flowers"; the Plenary Session, Monday evening, will be devoted to major addresses on prairie-related topics.

On Tuesday, August 5, three different field trips are offered, these to be followed by a banquet and a presentation on the subject of Sassafras, described as "an Ozark Odyssey".

Wednesday's sessions will both take place during the morning, the first under the heading "Landscaping and Restoration with Prairie Plants", the second, "Prairie Management and Preservation".

Surely you will want to see the program in detail; drop a line to Seventh North American Prairie Conference, Southwest Missouri State University Springfield, MO. 65802 and you will be sent information about everything you need to know.

GINSENG GATHERING

Walter H.Lewis

St.Louis, Missouri

Ginseng was the sole topic of conversation at a two day conference May 19-20, 1980 at the Ramada Inn in Jefferson City. Growers, buyers and sellers of ginseng, scientists conducting research on American species (Panax quinquefolium), as well as those with more general interest in conservation and culture of the species were there.

The gathering of over 125 from most eastern states and Ontario heard federal government reports on American ginseng export, largely to Hong Kong, from Ron Singer and Richard Jackowski for the U.S. and George Argus for Canada. Demand remains high with wild ginseng root commanding about three times the price of cultivated. As discussed by Ben Zaricor of the Fmali Herb Company, Santa Cruz, CA, in his paper "The Chinese Ginseng Experience--Could It Happen Here?" no one wants this demand to result in the extirpation of the American species in the wild,as occurred for all practical purposes for the Oriental gingeng (Panax ginseng).

This introduction was followed by papers on ginseng culture: "Cultivation Under a Natural Canopy" by Donan Jenkins, Sturgis, KY; "Aspects of Cultivation Under Artificial Shade" by Don Currie, Race-Hellyer Ginseng Growers Ltd., Waterford, Ontario; and "Experimental Cultivation Techniques" by D. B. Settles, Nicholasville, KY. They presented a wealth of data on new techniques and approaches for the growing of ginseng that could signal the development of better cultivation practices in the future.

Bill Boehner of the William J. Boehner and Co., New York, opened the second focus of the conference, the market place. He discussed ginseng from an exporter's view; Robert Corrs of the American Ginseng Co., Chicago, showed that indigenous ginseng is increasingly in demand in the American market place and Gordon Patty of the Foreign Agriculture Service, Washington, concluded this section by discussing trends in export and import.

The third and final aspect of the conference was scientific in emphasis. Papers were presented on "Demographic Studies of Ginseng in Missouri" (Walter H. Lewis, Washington University, St. Louis), "Development of the Embryo Within the Seed" (Leonard Stoltz, University of Kentucky, Lexington), "A Two-year Monitoring Program of Ginseng in Kentucky" (C. Richard Roberts, University of Kentucky, Lexington), and "New Developments in North Carolina Ginseng Research" (Thomas R. Konsler, North Carolina State University, Fletcher). These papers demonstrate that considerable progress has been made in research pertaining to this heretofore scientifically neglected species.

The second day concluded with remarks by the convenor, James H. Wilson of the Missouri Department of Conservation. Jim did a splendid job in putting together the program and in handling all arrangements with seeming ease. He will also edit the proceedings which should be available late in 1980.

See you all at the 3rd National Ginseng Conference (1981) in either North Carolina or New York.

(Editor's note: If you can't bear to wait so long to learn more about the cultivation of ginseng, the Conservation Department, P.O. Box 180, Jefferson City, MO, 65102, has available a pamphlet entitled, American ginseng: a forest crop, by Lewis.)

CATECHISM COLUMN

GYROMITRA BRUNNEA

MONPS member Lester Buch, of Duke, Missouri, sent this column scurrying when he wrote that many people in his part of the state avidly collect the "False Morel," Gyromitra brunnea, and that, to the best of his knowledge, they also consume it with impunity.

Our scurrying leads to the conclusion that those many people in his part of the state are both wise in the ways of Gyromitra...and lucky. The first authority we consulted was Mushrooms of North America, by Orson K. Miller, a mycologist who has studied fungi from Maine to Oregon and from Virginia to the tundra of northern Alaska and the Yukon.

Dr. Miller describes Gyromitra, Helvella and related species as "a really variable group, with toxic and edible species resembling each other confusingly....In addition, many people are adversely affected by some of the edible species." In his description of Gyromitra brunnea, he claims that the species is poisonous.

Our second consultation was held with Gary Lincoff and D. H. Mitchel, M.D. In their Toxic and Hallucinogenic Mushroom Poisoning, they have the following things to say, in different parts of the book: "The concentration of particular toxins in species of....Gyromitra....have recently been shown to vary widely from specimen to specimen even in the same species" (pg. 20). The "false morels (species of Gyromitra, mostly G. esculenta) are among the spring mushrooms most avidly gathered in parts of Europe and western North America....A very small percentage of the many who eat false morels suffer ill effects, but the mortality rate among those who become ill has been reported to be between 14.5% and 34.5%.

"Not all species of Gyromitra are known to contain the toxin gyromitrin, which on hydrolysis forms the deadly monomethylhydrazine (MMH). All, however, are suspected of containing it....All specimens of all species of Gyromitra must be presumed to be highly poisonous to deadly if eaten raw, if simply sauteed, or if boiled and consumed with the broth. In some cases even parboiling and discarding the water, which has been the traditional method of detoxifying these mushrooms, has failed to eliminate the toxins and a pleasant meal unsuspectingly became a last supper" (pp. 49-50).

Friends in Duke: you have been warned!

DENISON: FLORAL ABUNDANCE?

Every so often - or rather - ever so rarely we have a year in which some particular wildflower or groups of wildflowers put on an outstanding display - much more abundant than in "normal" years. What are the reasons for this? They could be cyclical, or they could be determined by the weather pattern beginning in the preceding year, or, maybe, they could be for other reasons.

If there is literature about this phenomenon, I have never encountered it. For instance, in 1963 the Firepink, Silene virginica, appeared in great masses in the Ozarks. Never since have the displays been nearly as impressive. This year seems to have produced unusual displays of Squirrel Corn, Dicentra canadensis. It seems worthwhile to establish records of such "years of plenty" and the related weather patterns. The spring of 1980 has certainly in Central Missouri a strange historical weather background, beginning with severe drought in August 1979, followed by a mild winter with little precipitation, and an unusually cold spring with an abundance of cloudy days.

Is anybody else interested in keeping records concerning the problem?

STATUS REPORTS

On October 1, 1979, the U.S. Fish and Wildlife Service awarded the Missouri Department of Conservation a 12-month contract to prepare status reports on thirty plant species proposed for federal listing. The initial phase of the project focused on collecting information about nomenclature, legal status, descriptions, distribution, taxonomic problems and habitat descriptions. The second phase involves gathering data on current distribution within the state, population biology, associated species, threats to populations and management recommendations by visiting populations in the field. The final objective of these status reports will be to make recommendations to the U.S. Fish and Wildlife Service advising them whether to list or delist these species. The following article is an example of the kind of information being gathered by Sherry Morgan, who has also prepared a "Guide to Missouri's Herbaria," available from the Missouri Department of Conservation.

AMORPHA BRACHYCARPA

Amorpha brachycarpa Palmer was described by E. J. Palmer in 1931 from material he had collected in Stone County, Missouri (J. Arnold Arboretum 12:171. 1931.) The generic name Amorpha is derived from the Greek word amorphos, meaning deformed, indicating the absence of four petals in the flowers of this genus. The specific epithet, brachycarpa, means short-fruited. Hairless Leadplant is the common name of this species.

The type collection is deposited in the herbarium of the Arnold Arboretum (A); isotypes are deposited in the following herbaria: University of Kansas (KANU), University of Minnesota (MIN), and the U.S. National Herbarium (US).

The genus Amorpha is placed in the Tribe Psoraleae of the Family Fabaceae (Leguminosae) commonly called the Pea or Bean Family.

When Palmer first described Amorpha brachycarpa he noted a close relationship with A. canescens. A. Brachycarpa is "distinguished both by its glabrous character and by the relatively broader, much flattened, straight-backed pod, with strongly reflexed beak. The leaflets are also relatively shorter and broader than in typical forms of A. canescens."

It is important to note that the study of this genus has led to the description of several varieties due to the continuum of variation shown in the diagnostic characters. The principal morphological characters used in distinguishing species are the shape and size of the fruit, the form of the calyx-lobes and the pubescence (Palmer, 1931).

Aware of the range of variation within the genus Amorpha, Palmer grew specimens of A. brachycarpa at the Arnold Arboretum from seeds and roots collected at the type locality. The resulting plants retained the distinguishing flower and fruit characters of the parent material, and have been preserved as paratypes.

There is a question regarding the validity of retaining this taxon as a distinct species. Dr. Robert Wilbur of Duke University (Durham, N.C.) is the current authority on the genus, having recently revised the North American species (Rhodora 77:337-409. 1975). In an earlier paper Wilbur gives an excellent discussion of previous treatments and states his reasons for not accepting A. brachycarpa as a distinct species (J. Elisha Mitchell Sci. Soc. 80:57-65. 1964). The following discussion covers the important points made in the latter paper.

A. canescens is a wide-ranging species exhibiting considerable variation in the degree of pubescence; therefore, Wilbur considers A. brachycarpa to be the most glabrescent form of the A. canescens complex. He also feels that the range of variation in A. canescens is broad enough to include the other differences described by Palmer: i.e., the shape of the fruit and leaflets.

Isely (Iowa State Jour. Sci. 37:106. 1962) rather reluctantly accepts A. brachycarpa as a species; Steyermark accepts it without reservation (Flora of Missouri, pg. 902. 1963). Isely mentions pubescence and length of calycine teeth as distinguishing characters; Steyermark distinguishes the species by differences in pubescence, fruit length, and distribution in Missouri. Wilbur comments that A. canescens exhibits a greater range of variation than Isely and Steyermark indicate.

Wilbur concludes: "If it were not for the almost continuous range of specimens, from densely pubescent to veins nearly glabrous, A. brachycarpa might be recognized as a weakly differentiated taxon, but such a procedure becomes impossible with our present knowledge. The more glabrescent forms are scattered throughout the range of the species."

Palmer's original description of A. brachycarpa follows:

> A slender shrub 6-9 dm. tall, with few, erect, glabrous or sparsely pubescent, grooved branches. Leaves numerous, 7-12 cm. long, sessile or nearly so, with 21-45 oblong leaflets, rachis slender, glabrous or nearly so, channeled above; stipules inconspicuous, linear-subulate, 1-1.5 mm. long; leaflets approximate, crowded or imbricately overlapping, oblong, symmetrical or slightly oblique, 8-15 mm. long, 4-8 mm. wide, rounded or subcordate at base, rounded or slightly emarginate and mucronate at apex, the terminal one reduced and often nearly orbicular and deeply emarginate, thin but firm, glabrous or with a few ciliate hairs on the margins and on the veins beneath, margins slightly revolute, the mid-vein prominent and the secondary veins rather conspicuous on the slightly reticulate lower surface; petioles glabrous, about 1 mm. long. Inflorescence paniculately branched, 1-2.5 dm. long, of many, erect, slender, closely-flowered branches; flowers on very short (1-15. mm.) pedicels; calyx turbinate, 4-5 mm. long, the tube angled, glabrous or nearly so, except the lanceolate, acuminate, calyx-lobes, the upper two of which are about two-thirds the length of the tube and the lower ones fully as long or longer than tube, ciliate on the margins; standard obovate, truncate or slightly emarginate at apex, bright violet-blue; stamens and glabrous style exserted. Fruit obliquely obovate, 4-5 mm. long, 3-3.5 mm. wide, much flattened. nearly straight on the back, terminated by curved beak and persistent style, dark brown, with conspicuous resinous dots, margins slightly thickened, one-seeded, the pod scarcely exceeding the calyx-lobes. Flowering: May - August. (Palmer, 1931)

There are three species of Amorpha in Missouri. A fruiticosa, False Indigo, is a tall plant, mostly 1-4 m. tall and grows in low or moist ground along streams and wet rocky banks. The other two species are usually less than 1 m. tall and are found in dry, high, or rocky ground. Steyermark (Flora of Missouri, 1963) distinguishes between them as follows:

> Plant glabrous (without hairs) or nearly so; fruit glabrous (without hairs), resin-dotted; fruit longer than the style and beak; rarely found, known only in southwestern Missouri.....A. brachycarpa (Hairless Leadplant)

Plant densely to sparsely hairy; fruit white-hairy; fruit about equaling the style and beak; common species throughout Missouri....A. canescens (Leadplant)

A. brachycarpa has no legal status at either the federal or state level. The notice of review proposing that the species be listed in the "threatened" category was published in the Federal Register of July 1, 1975 - 40(127: 27860). Other formal reports include recommendations for listing as threatened in both the 1975 Smithsonian Institution report (House Document No. 94-51) and Endangered and Threatened Plants of the United States (Ayensu and DeFilipps, 1978). At the state level, the species is listed as rare in Rare and Endangered Species of Missouri (Nordstrom, et al., 1977).

Amorpha brachycarpa is known only from the Ozark region of southwestern Missouri, in limestone glades, barrens and rocky open woods. The species has been recorded from Barry, Lawrence, and Stone Counties. Please report any sightings of this species to the Natural History Section, Missouri, Department of Conservation, P.O. Box 180, Jefferson City, Missouri 65102.

ELECTION PROCEEDINGS

Under Article VII of our Bylaws, one reads as follows:

Section 1.
Notice of the annual election shall be made in writing.

Section 2.
The President shall appoint a Nominating Committee to consist of a Chairman and three or more members of which only one is a member of the Board of Directors. They shall report to the President the names of the nominees selected by the Committee. The names of the Nominating Committee, a list of the offices to be filled and the names of the nominees are to be printed in the Newsletter, or reported to the membership by mail.

Section 3.
Members may suggest nominations to the Nominating Committee.

The name and qualification of any paid member, submitted for a particular office by a group of five paid members, must be included on the ballot if in the hands of the Nominating Committee before the close of nominations. A ballot including the nominations shall be printed and mailed to all paid members with instructions for its return within a reasonable and specified time.

Section 4.
Ballots shall be counted by a Ballot Committee appointed by the President, and the candidates receiving the most votes certified as elected. In case of a tie vote the Board of Directors shall decide. The newly elected officers shall take office at the conclusion of the annual meeting.

OUTING

WASHINGTON STATE PARK, Sunday, April 4, 1980

Edgar Denison
St. Louis, Missouri

This outing was a joint affair of our Society and Webster Groves Nature Study Society, which had just celebrated its 60th birthday two days earlier.

Besides the two leaders, Art Christ and myself, there came 24 participants. The wind was strong and cold, and those who came early got an early start as Art jumped the gun with 17 in his group. I led the remaining 7 up on the East-facing slope above the Big River, which offers an outstanding display of Hepatica nobilis var. acuta (Liverleaf). They had passed their prime, and we climbed - some on all fours - to the parapet of the bluffs where we got an eye-level look at the inflorescence of Fraxinus quadrangulata (Blue Ash), the only one of our Ash species with perfect flowers - the others being dioecious. Other trees and shrubs in bloom were Amelanchier arborea (Shadbush), Benzoin aestivale (Spicebush), and Rhus aromatica (Fragrant Sumac). Walking along the steep road, and, later, driving out of the park, we encountered Anemonella thalictroides (Rue Anemone), Viola papilionacea (Common Violet), Viola sororia (Woolly Blue Violet), Antennaria plantaginifolia (Pussytoes), and one multiflowered specimen of Ranunculus fascicularis (Early Buttercup). In the gritty soil along the road we saw Draba cuneifolia and D. brachycarpa (both called Whitlowgrass).

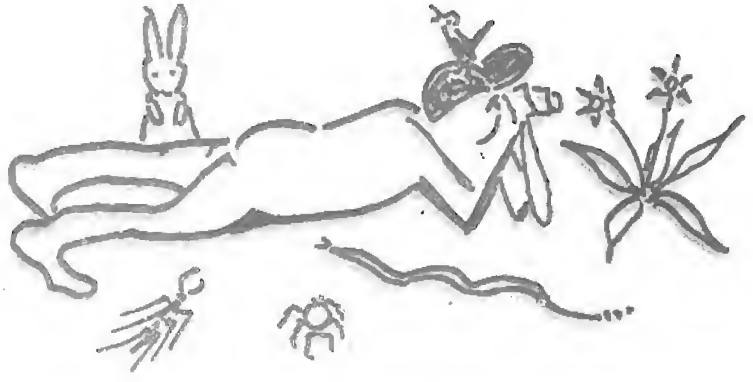
After lunch, eaten in our cars, refuges from the windchill-factor, we entered the luxurious north-facing slope of the Big River valley, which is deservedly famous for its abundance of wildflowers. Dicentra cucullaria (Dutchman's Breeches) was everywhere. The display of Dicentra canadensis (Squirrel-Corn) was by far the best and most abundant I have ever seen. Stylophorum diphyllum (Celandine Poppy) had begun to flower but the "big show" will come later after a few warmer days and nights. Sanguinaria canadensis (Bloodroot) presented a few late specimens. We saw one small specimen of Corydalis flavula (Corydalis). This genus was badly decimated during the preceding two severe winters. Isopyrum biternatum (False Rue Anemone) provided magnificent groups. Viola pensylvanica (Yellow Violet) was just beginning to show a few blossoms, while Phlox divaricata (Early Phlox) was found by Art's group in one specimen in bloom. Other woodland plants, which were well represented were: Erythronium albidum var. albidum (Troutlily), Claytonia virginica (Springbeauty), Mertensia virginica (Virginia Bluebells). The ground at the bottom of the hillside was covered with Collinsia verna (Blue-eyed Mary) but only one of our groups saw one flower. This should provide an exciting display in about 10 days from our visit. Uvularia grandiflora (Bellwort), though in flower, was about one half the height it will obtain a little later.

The large field between the woods and the Big River offered a variety of "waste area" plants: Veronica arvensis (Corn Speedwell), Viola rafinesquii (Johnny-jump-up), Lamium amplexicaule (Henbit) and L. purpureum (Dead Nettle), Stellaria media (Common Chickweed), Thlaspi arvense (Field Penny Cress), Thlaspi perfoliatum (Perfoliate Penny Cress), also prize specimens of Capsella bursa pastoris (Shepherd's Purse) and the ubiquitous Taraxacum officinale (Dandelion), the latter in a super specimen having 24 fully open inflorescenses, some of them with spreading pedicels. In addition, Art found Androsace occidentalis (no common name), a member of the Primrose Family. Bordering the stream Acer negundo (Boxelder) trees were in full bloom.

That same Sunday night large parts of central and all of northern Missouri were covered with up to 5 inches of very wet snow with temperatures in St. Louis around the freezing point. The spring flowers have been smashed down and some will not be resurrected during the 1980 Spring season.

STILL LOOKING FOR A LOGO

In fact, we're longing for a logo! How can we write an impressive letter on someone's else stationery? Or how can we symbolize what MONPS stands for, when we make a public presentation of any sort? We need a simple graphic that will speak for itself.....and for us, and we know that out there among our many-talented members are people who can put together an attractive graphic that will serve well our purposes and our needs. It should be in black and white, not over 4" x 6", and it should be sent to Edgar Denison no later than August 1. His address is 544 East Adams Street, St. Louis, 63122. Denison will arrange to circulate the entries among the Board members, and the winning logo will perpetuate the taste of the designer, who will also have (as we've said before) our sincere thanks, publicity (if wanted), and a year's free membership in MONPS as reward. Please give it a try!



GRACIAS

We have been remiss in previous issues in not mentioning the non-Board members of MONPS who have graciously helped, in various ways, to get Missouriensis to you: typing (the biggest job of all, and hence deserving of the most thanks); illustrating; folding, stapling, addressing, stamping and mailing. Those to whom such thanks are due to date include Barbara Estill, Catherine Filla, Vivian Liddell. Many thanks, indeed!